
Immunotherapy for HIV infection using engineered hematopoietic stem/progenitor cells

Grant Award Details

Immunotherapy for HIV infection using engineered hematopoietic stem/progenitor cells

Grant Type: Quest - Discovery Stage Research Projects

Grant Number: DISC2-09123

Project Objective: Immunotherapy for HIV infection using engineered hematopoietic stem/progenitor cells

Investigator:

Name:	David Baltimore
Institution:	California Institute of Technology
Type:	PI

Disease Focus: HIV/AIDS, Infectious Disease

Human Stem Cell Use: Adult Stem Cell

Cell Line Generation: Adult Stem Cell

Award Value: \$1,586,934

Status: Active

Grant Application Details

Application Title: Immunotherapy for HIV infection using engineered hematopoietic stem/progenitor cells

Public Abstract:**Research Objective**

The therapeutic candidate proposed here is hematopoietic stem/progenitor cells engineered to encode for HIV-specific T cell receptors.

Impact

The success of the proposed studies will test the efficacy of an approach to provide long-lasting functional cure for HIV infection, obviating the need for anti-retroviral therapy.

Major Proposed Activities

- Test if engineered hematopoietic stem/progenitor cells can engraft in humanized mice and differentiate into engineered HIV-specific cytotoxic T cells.
- Test if cytotoxic T cells differentiating from engineered hematopoietic stem/progenitor cells are functionally active in vitro.
- Test if engineered hematopoietic stem/progenitor cells can suppress HIV infection in engrafted mice.

Statement of Benefit to California:

HIV affects >200,000 individuals in the State of California. The current anti-HIV treatment needs to be taken constantly for the patient's life time, is expensive, and has negative side effects. The proposed research can address these issues by using engineered hematopoietic stem cells to treat HIV infection. Success of this approach will lead to clinical trials that will be initiated in California and will lead to therapies that will benefit millions of HIV patients in California and worldwide.

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